VISION

Software for the colour blind
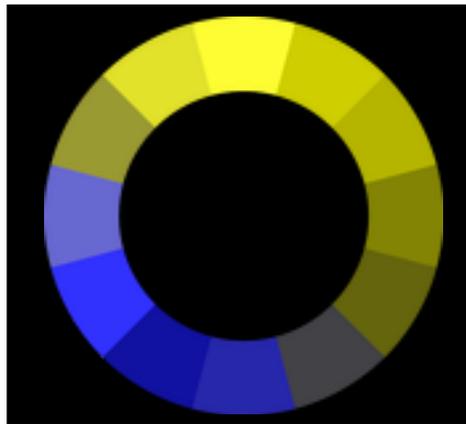
INFORMATION PACK

Version 3

08 January 2018

www.visiontechnology.co

CONTENTS

www.visiontechnology.co

1.   What does Vision do?

Vision is software allowing people with different kinds of colour blindness (colour vision deficiency) to see more colors.

Vision provides solutions to some of the everyday problems experienced by colour blind people. People with various types of colour deficiency could benefit from the use of Vision software including those affected by Tritanopia *(blue colour vision deficiency)*, Deuteranopia *(green)*, Protanopia *(red)*.

There are some widely spread misconceptions about colour blindness , for example people generally have the assumption that if you suffer from blue-yellow color blindness these are the only colors you have trouble seeing. But that's wrong. Color blindness doesn't relate to just two color shades you can't distinguish, it is the whole color spectrum which is affected.

There are close to 300 million people who are colorblind and struggle every day. Many of them are facing obstacles that are stopping them from becoming pilots, scientists, doctors, police officers, firefighters, electricians, etc.

It is these people that Vision is aiming to assist, by making the world a much more colourful and better place for them.

2. What is colour blindness and which are the different types ?

Colour blindness, also known as colour vision deficiency, is the decreased ability to see colour or differences in colour. In many languages often as a synonym the world "daltonism" is used, although this term refers to one particular form of colour blindness – deuteranopia. The term derives from the name of the scientist John Dalton who suffered himself from this colour vision deficiency and is the first to describe it.
The most common cause of colour blindness is an inherited fault in the development of one or more of the three sets of colour sensing cones in the eye. Colour blindness can also result from physical or chemical damage to the eye, optic nerve, or parts of the brain. There is no cure for colour blindness.

Total colour blindness is much less common than partial colour blindness. Monochromacy, also known as "total colour blindness", is the lack of ability to distinguish colours (and thus the person views everything as if it were on a black and white television); caused by cone defect or absence. Monochromacy occurs when two or all three of the cone pigments are missing and colour and lightness vision is reduced to one dimension. It can also be associated with light sensitivity (photophobia) and poor vision.

Partial colour blindness or Dichromacy is a moderately severe colour vision defect in which one of the three basic colour mechanisms is absent or not functioning. It is hereditary and, in the case of protanopia or deuteranopia, sex-linked, affecting predominantly males. Dichromacy occurs when one of the cone pigments is missing and colour is reduced to two dimensions, problematic are usually one of the primary colours – red, green and blue; and the conditions are called Protanopia, Deuteranopia and Tritanopia.

The Ishihara test, which consists of a series of pictures of coloured spots, is the test most often used to diagnose colour vision deficiencies. The test is named after the Japanese Dr. Shinobu Ishihara.
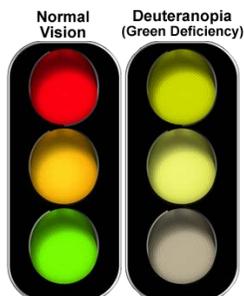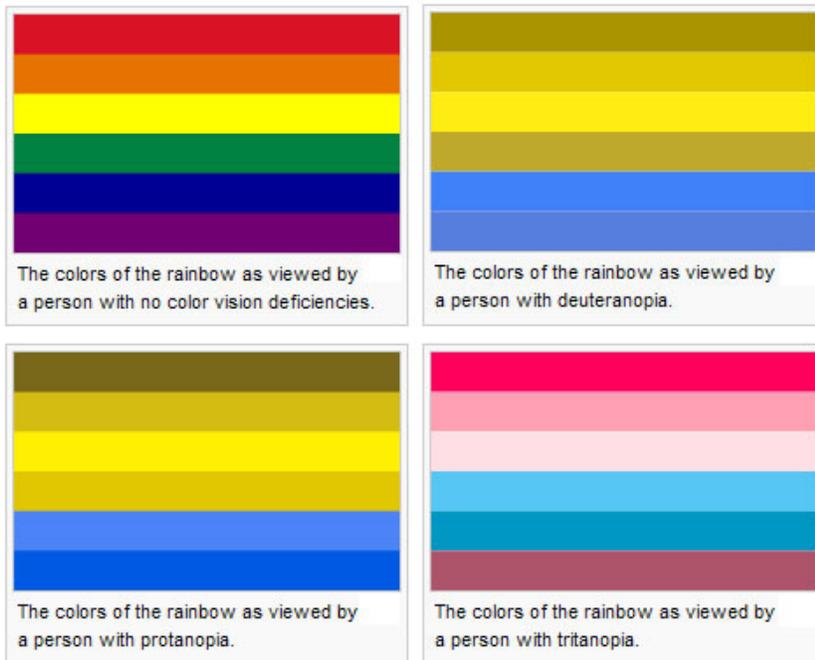
3.   What do colour blind people see?

Colour blind people can usually see clearly and in focus. To them, what they see is normal, so it's not unusual for colour blind people to reach adulthood without realising they are colour blind. Often people only discover they are colour blind when they apply for certain jobs (such as the armed services) and the diagnosis can come as a shock.

It's a common myth that people with colour blindness only confuse reds and greens. People with red and green types of colour vision deficiency actually experience problems with a wide range of colours. Greens, browns, oranges, yellows and reds can be easily mixed up because all these colours are seen as shades of 'muddy' green. There are many surprising combinations which often confuse colour blind people. For example, blues and purples/deep pinks are often mixed up. This is because pinks and purples are blue mixed with red. Red is a colour which colour blind people don't see, so purple can appear as blue.
Pastel colours generally all appear grey.

Red/green colour blindness is a generic term for different types and severities of colour blindness, so people with colour vision deficiency don't all see colours in the same way as each other. For example green deficients can mistake greens for greys or even pinks, whereas red deficients will sometimes confuse reds with black.

The colors of the rainbow as viewed by a person with no color vision deficiencies.

The colors of the rainbow as viewed by a person with deuteranopia.

The colors of the rainbow as viewed by a person with protanopia.

The colors of the rainbow as viewed by a person with tritanopia.

4. How many people around the world are colour blind?

About 8% of all men and about 0.5% of all women are suffering from colour blindness (colour vision deficiency). This means chances that your neighbour or one of your classmates is colourblind are very high.

To put the percentages into perspective – there are close to 300 million people who are colourblind and struggle every day.
99% of all colourblind people are suffering from red-green colour blindness.

# 5. What is "Daltonization"?

The process of 'Daltonization' is named after John Dalton, who was an English chemist, physicist, and meteorologist. He is best known for proposing the modern atomic theory, but also for his research into colour blindness, sometimes referred to as Daltonism in his honour. Daltonization algorithms utilize confusion lines to compensate for colour blindness. This is accomplished by shifting colours away from confusion lines towards colours visible to the colourblind individual. For example, daltonizing for protanopia involves shifting red values towards the blue end of the spectrum.

Simply put – the idea of Daltonization is that different colours that look identical to a person with colour vision deficiency are shifted in "opposite" directions so that they can distinguish them. In reality it's supposed to help us distinguish the colours we can't see using the colours we still can. Vision applies real time screen daltonization processes, which is one of the most prominent features setting it apart from any other similar developments.

www.visiontechnology.co

6. Why is it important to have VISION installed on your devices?

Colour blind individuals experience multiple obstacles in their everyday life, many of which are hard to imagine for people with normal colour vision. They can face issues even with simple and routine tasks such as selecting and preparing food, gardening, doing sports, driving or choosing clothes. A great number of activities undertaken via digital devices can also turn out to be problematic for people with colour vision deficiency – the colour background or text font of many websites can make reading the text and comprehending the information almost impossible; filling in and completing interactive forms on the internet can also be potentially problematic.

In addition to the activities causing difficulty we could add working with documents with colour graphic elements and design, understanding certain video clips and graphs, the correct choice of colours for presentations and other documents, etc.

Normal   Deuteranop   Protanop   Tritanop
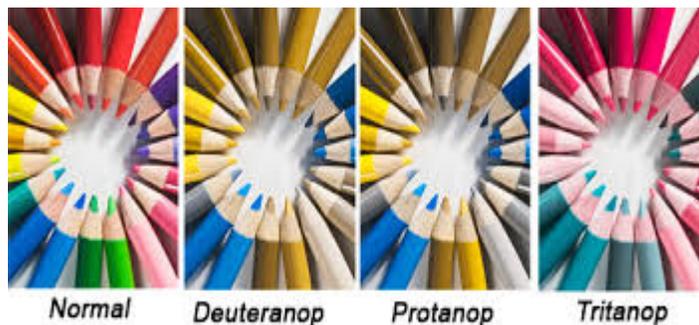
The biggest issue however is in schools and for the students with colour vision deficiency. As most teachers have never been given any training in how to identify and support colour blind students, teachers may not be aware that statistically speaking, there will be at least one colour blind child in every classroom and the proportion will be much higher in all-boys schools.

Colour is a fundamental tool in society. Taking education as an example – educators depend upon on the ability of pupils to be able to distinguish between primary colours from the earliest stages of their education.

If we think about how children are taught in the early years even the most basic instructions often include colour (for example, pick up the red brick). Before reading, we encourage children to order things by forming colour patterns with beads; colour is used to describe almost everything, from the big brown dog to the green door for the toilet; and we ask young children to fill in colouring sheets in specific colours and sing songs about the colours of the rainbow.

If children aren't 'getting' a percentage of what we are saying, they can't learn to full capacity. This can undermine their confidence at an impressionable age and give a poor foundation for future learning.

As children progress through school, ability to differentiate between colours becomes even more important. Without correct support they are often unable to understand information in textbooks, on the whiteboard, in websites and in software.

The link between school disengagement / disappointment from school with phenomena like early school leaving, problematic performance on the labour market, anti-social behaviour and lack of contribution to society becomes much more apparent in the recent years.

Until recently colour blindness was not considered to be either a special educational need (SEN) or a disability. In certain countries now the relevant educational authorities recognise that colour vision deficiency can fall under both definitions.

With all the above in mind, we at "VISION TECHNOLOGY LTD." declared in March 2017 we are prepared to give away a number of free activations for our product VISION PRO, assisting the use of digital devices for people with various forms and severity of colour vision deficiency. As of November 2017 Vision is already being used on approximately 60 000 digital devices globally.

Vision can also be used for screening and assistance for colour blindness in schools on a large scale, for instance the Bulgarian Ministry of Education have announced in November 2017 that they would like to have Vision installed on all school digital devices.

In addition a strategic partnership agreement was signed between Vision Technology and the Bulgarian Ministry of Education in December 2017.

By installing VISION PRO on your devices and the devices you manage, you are showing care for your employees, attention to the needs and future success of those who study, and responsibility towards new technologies, providing accessibility and quality of life.

And last but not least – you are making the world a more colourful place for individuals, who belong to a group of 300 million people globally!

7.   What makes Vision unique?

A number of things set Vision apart from other developments in the area:

1. Free test to determine your type and severity of colour vision defficiency.
2. Personalised settings to suit your test results.
3. Real time screen daltonisation.
4. No need to use your camera or split your screen.
5. Vision works entirely in the background.
6. Does not interfere with what you do on your screen.
7. Life time license for the PRO version.
8. A very affordable solution – just 10$ a license; free licenses for schools and other educational establishments.
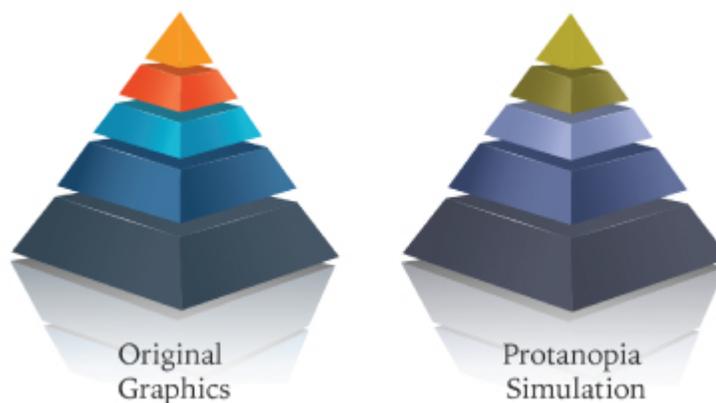
8.   How to install Vision?

System Requirements: Windows 7 or later. Windows Vista and Windows XP are not supported.

Size: 8.97 MB

Version: the most recent version (**Vision Pro 0.0.7** from 13/10/2017)

Installation steps:

1. Visit https://visiontechnology.co/vision/ .
2. Download and save the installation file to your desktop.
3. Install and start Vision.
4. Optionally – do the test https://visiontechnology.co/test/#instructions-1 .
5. Activate the PRO version.
6. Adjust the settings according to your test results or use the options for settings within the software itself.
7. Enjoy the abundance of colours!

N.B.!

➢ For step 4 – the test isn't a mandatory step of the installation process; you could use other tests available online or proceed directly to the options for settings within the software itself.
➢ For step 5 you will need an activation code, which you can purchase from "Vision Technology LTD. "
➢ You can watch a video manual with all installation steps and settings here https://visiontechnology.co/vision/ (bottom of the page) or here https://www.youtube.com/watch?v=BjHDzOY4zn8&feature=youtu.be

Thank you for choosing Vision! ☺

To contact us:

W: www.visiontechnology.co   F: https://www.facebook.com/colorblind.vision

E: contact@visiontechnology.co   T:+359 879345209, +359 877666374